

## CLAIMS

1. A method for fabricating mirrored spheroidal balls using a plurality of pipettes, the method comprising the steps of:

- a) providing a periodic first liquid flow from said pipettes onto a moving metallic first plate;
- b) forming a first regular array of transparent partial-hemispheres adhering to said first plate;
- c) providing a periodic second liquid flow from the pipettes onto a moving metallic second plate;
- d) forming a second regular array of partial-hemispheres adhering to said second plate, said second regular array matching the first regular array ;
- e) bonding in alignment said first and second plates to form mirrored spheroidal balls; and
- f) removing said mirrored spheroidal balls from the joined plates to form rotationally free balls.

2. A method for fabricating top-mirrored quasi-hemisphere balls using a plurality of pipettes, the method comprising the steps of:

- a) providing a periodic first liquid flow from said pipettes onto a moving metallic plate;
- b) forming a first regular array of quasi-hemispheres adhering to said metallic plate;
- c) removing said quasi-hemisphere balls from said metallic plate to provide rotationally free, mirrored quasi-hemisphere balls.

3. A method of manufacturing mirrored balls consisting of the steps of:

- a) providing a first ridged cellular structure for holding the balls; and
  - b) coating the tops of said balls with metal;
4. The method of claim 3 wherein the tops of the balls are flat.

5. The method of claim 3 wherein the tops of the balls are spheroidal.
6. The method of claim 3 wherein the balls are cylindrical.
7. The method of claim 3 wherein the balls are cylindrical with flat tops.
8. The method of claim 3 wherein vapor depositing means provides the metallic coating.
9. The method of claim 3 wherein liquid metal contacting means provides the metallic coating.
10. The method of claim 3 wherein focussing said balls occurs as separate concave groups of large aggregates of balls within a ridged cellular structure.
11. A method for fabricating mirrored mid-plane spheroidal balls using a plurality of nuggets bonded to a plate, the method comprising the steps of:
  - a) bonding a first dielectric plate and a second dielectric plate to both sides of a metallic plate;
  - b) cross cutting said first and second dielectric plates to form an array of evenly spaced nuggets on said metallic plate;
  - c) heat treating said nuggets to form hemispheres on both sides of said metallic plate;
  - d) removing the combination of adjoining hemispheres with sandwiched metallic plate between them to form rotationally free mirrored midplane spheroidal balls.
12. The method of claim 11 wherein immersing the nuggets in a hot liquid is the heat treatment.
13. The method of claim 11 wherein said first dielectric plate and said second dielectric plate are transparent.
14. The method of claim 11 wherein said first dielectric plate is transparent and second dielectric plate is opaque.

15. The method of claim 11 wherein said metallic plate functions both as mirror material and for maintaining tension on the assembly.
16. The method of claim 11 permitting separate formation of the mirror by means of a cut-out in said metallic plate for maintaining tension on the assembly.
17. A method for fabricating mirrored mid-plane spheroidal balls, the method comprising the steps of:
- a) discharging liquid flow to solidify as partial-hemispheres in a plurality of hemispherical molds;
  - b) providing a metallic coating on the flat top surface of said partial-hemispheres; and
  - e) bonding in alignment said hemispheres to form mirrored midplane spheroidal balls;
18. The method of claim 17 wherein vapor depositing means provides the metallic coating.
19. The method of claim 17 wherein liquid metal contacting means provides the metallic coating.
20. The method of claim 17 wherein discharging liquid metal into one set of the said plurality of hemispherical molds results in metallic flat top hemispheres serving as mirrors.
21. A method for fabricating mirrored partial-hemisphere balls, the method comprising the steps of:
- a) discharging liquid flow to solidify as partial-hemispheres in a plurality of hemispherical molds; and
  - b) providing a metallic coating on the flat top surface of said partial-hemispheres.

22. The method of claim 21 wherein discharging liquid metal into the said plurality of hemispherical molds results in metallic flat top hemispheres not requiring a separate metallic coating.